

REMARKS:

Claims 37-48 remain in the application for consideration.

The Office Action includes objections to the Abstract and to the claims. The Office Action also indicates that claims 37-48 stand rejected under 35 U.S.C. § 112, first paragraph; claims 37, 39-41, 43-45, and 47-48 stand rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 4,646,238 to Carlson Jr. et al. ("Carlson"); and claims 38, 42, and 46 stand rejected under 35 U.S.C. § 103(a) over Carlson in view of Chase et al., "Production and Operations Management: Manufacturing and Services" (1995).

By this Amendment, claims 41 and 45 have been amended in order to improve the grammar thereof. These amendments are unrelated to the patentability of these claims and are not necessitated by any prior art. It is respectfully submitted that, since these amendments merely improve the form of the claims, these amendments conform to the requirements set forth in 37 C.F.R. § 1.116. Therefore, entry of these amendments is respectfully requested.

ABSTRACT:

The Office Action includes an objection to the Abstract, stating that "the abstract does not accurately reflect the scope of the claimed invention...."

It is respectfully requested that clarification be provided as to how exactly the Abstract is considered to be inconsistent with the scope of the claims.

It is further requested that, if the objection is to be maintained, that the objection be held in abeyance at least until such time as claims have been allowed or deemed allowable by the Examiner.

Applicant considers the Abstract to be fully compliant with 37 C.F.R. § 1.72(b) and MPEP 608.01(b). It is therefore respectfully requested that the objection to the Abstract be reconsidered and withdrawn.

CLAIM OBJECTION:

The Office Action objects to claim 41 due to a grammatical error. By this Amendment, appropriate correction has been made. It is therefore respectfully requested that the objection to the claim 41 be reconsidered and withdrawn.

REJECTIONS UNDER 35 U.S.C. § 112:

The Office Action indicates that claims 37-48 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. However, it is respectfully submitted that the Office Action fails to establish a *prima facie* case of failure to comply with the enablement requirement.

The test for determining whether a claimed invention is properly enabled by the specification has been well-established: "Is the experimentation needed to practice the invention undue or unreasonable?"¹ The MPEP provides several factors for making an analysis of the undue experimentation question:

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.²

The MPEP clearly states that each of these factors should be considered when making an analysis of undue experimentation:

¹ MPEP 2164.01, citing *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916), and *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

² MPEP 2164.01(a).

It is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. The examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of nonenablement must be based on the evidence as a whole.³

Thus, based on the guidelines set forth in the MPEP, a proper analysis should be based on evidence related to each of the above factors. However, the only discussion in the Office Action regarding this rejection is as follows:

Regarding Claims 37, 41 and 45 the specification does not reasonably provide enablement for determining the demand quantity of an end product that a manufacturer is to produce to satisfy predicted future demand, a second intermediate-product quantity that the manufacturer can produce or the total by-product quantity that the manufacturer can produce. Without this disclosure one skilled in the art would be unable to practice the invention without undue experimentation.⁴

It is respectfully submitted that the above is purely conclusory. As such, it provides none of the analysis required by the MPEP. For example, the MPEP requires that evidence related to each of the above factors *must* be considered; however, the Office Action fails to mention even one of these factors, and certainly provides no reasoning or analysis based on each of the factors.

It is also well-established that the Examiner bears the initial burden of providing the appropriate support for establishing a *prima facie* case in rejecting an application. As stated by the Federal Circuit, "[i]f examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent."⁵ Since the Office Action fails to provide any of the requisite analysis for supporting this rejection, it is respectfully submitted that the rejection is improper and should be withdrawn.

In light of the discussion above, it is respectfully requested that the rejection of claims 37-48 under 35 U.S.C. § 112 be reconsidered and withdrawn.

³ *Id.*, referencing *In re Wands*, 858 F.2d 731, 737, 740, 8 USPQ2d 1400, 1404, 1407 (Fed. Cir. 1988).

⁴ Office Action, page 4.

⁵ *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

REJECTIONS UNDER 35 U.S.C. § 102:

Claims 37, 39-41, 43-45, and 47-48 stand rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 4,646,238 to Carlson Jr. et al. ("Carlson").

However, Carlson fails to disclose all of the limitations of claims 37, 39-41, 43-45, and 47-48, as discussed below. Therefore, Carlson cannot anticipate claims 37, 39-41, 43-45, and 47-48.

A claim is anticipated by a prior art reference only if the reference discloses or inherently describes every detail of the claim. According to the MPEP, "[a] claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."⁶ Also according to the MPEP, "[T]he identical invention must be shown in as *complete detail* as is contained in the ... claim."⁷

Claims 37-40

Claim 37 recites *inter alia*:

determine, based on the end product demand information, a demand quantity of the end product that a manufacturer is to produce to satisfy the predicted future demand, ***wherein production of the demand quantity of the end product requires producing a first intermediate-product quantity of an intermediate product that is further processed to produce the demand quantity of the end product***, and requires producing a first by-product quantity of a by-product;

determine, based on the intermediate product information and the demand quantity, a second intermediate-product quantity of the intermediate product that the manufacturer can produce in addition to the first intermediate-product quantity, ***wherein production of the second-intermediate-product quantity requires producing a second by-product quantity***;

⁶ MPEP 2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), emphasis added.

⁷ MPEP 2131, citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), emphasis added.

(Emphasis added.) Thus, claim 37 specifically recites (1) that production of a certain quantity of end product **requires** producing a certain quantity of intermediated product, (2) that said intermediate product is **further processed to produce the end product**, and (3) that production of a certain quantity of intermediate product **requires** producing a certain quantity of by-product. Claims 38-40 depend from claim 37 and therefore include the same limitations at least by reference.

Carlson fails to disclose these limitations. Carlson relates to manufacturing semiconductor devices. Carlson discusses how semiconductor devices are subjected to testing. Devices passing more rigorous tests are given a higher grade, while devices not passing (referred to as “by-product” in Carlson) are given a lower grade. However, there is nothing in Carlson to suggest that production of higher grade devices, or any devices, *requires* producing lower grade devices, which Carlson terms “by-products.” Furthermore, the lower grade devices discussed in Carlson are *not further processed to produce higher grade devices*. Carlson also mentions co-products, referring to different grades of devices resulting from a same test. There is nothing in Carlson to suggest that production of any device *requires* producing co-product devices, and there is nothing in Carlson to suggest that production of a co-product device *requires* producing lower-grade devices that Carlson refers to as “by-product.”

It is noted that the Office Action attempts to circumvent the above-noted distinctions by equating “requires” to “involves.” However, as noted above, the claim should be examined based “each and every element *as set forth in the claim*.” Thus, the substitution of “involves” for “requires” in analyzing the claims is improper and therefore unsuitable for supporting the present rejection.

Based on the standards set forth in the MPEP and cited above, the disclosure of Carlson is *not* sufficient for establishing that Carlson anticipates claim 37 because Carlson clearly fails to disclose all of the limitations of claim 37 in as *complete detail* as is contained in claim 37. Therefore, it is respectfully submitted that Carlson cannot anticipate claim 37, or claims 38-40, which depends from claim 37.

Claims 41-48

With respect to independent claims 41 and 45, each of these claims includes limitations similar to those discussed above in connection with claim 37. Thus, the arguments presented above in connection with claim 37 apply equally to claims 41 and 45, as well as their dependent claims.

For the reasons set forth herein, the Applicants submit that claims 37-48 are not anticipated by Carlson. The Applicant further submits that claims 37-48 are in condition for allowance. Therefore, the Applicant respectfully requests that the rejection of claims 37-48 be reconsidered and that claims 37-48 be allowed.

THE LEGAL STANDARD FOR ANTICIPATION REJECTIONS UNDER 35 U.S.C. § 102:

The following sets forth the legal standards for "anticipation."

The events that can lead to anticipation can be divided into the following seven categories, all defined by statute:

1. Prior Knowledge: The invention was publicly known in the United States before the patentee invented it.
2. Prior Use: The invention was publicly used in the United States either (i) before the patentee invented it; or (ii) more than one year before he filed his patent application.
3. Prior Publication: The invention was described in a printed publication anywhere in the world either (i) before the patentee invented it; or (ii) more than one year before he filed his patent application.
4. Prior Patent: The invention was patented in another patent anywhere in the world either (i) before the patentee invented it; or (ii) more than one year before he filed his application.

5. On Sale: The invention was on sale in the United States more than one year before the patentee filed his application.

6. Prior Invention: The invention was invented by another person in the United States before the patentee invented it, and that other person did not abandon, suppress or conceal the invention.

7. Prior U.S. Patent: The invention was described in a patent granted on a patent application filed in the United States before the patentee made the invention.

Each of those seven events has its own particular requirements, but they all have the following requirements in common:

1. Anticipation must be shown by clear and convincing evidence.
2. If one prior art reference completely embodies the same process or product as any claim, the product or process of that claim is anticipated by the prior art, and that claim is invalid. To decide whether anticipation exists, one must consider each of the elements recited in the claim and determine whether all of them are found in the particular item alleged to be anticipating prior art.
3. There is no anticipation unless every one of those elements is found in a *single* prior publication, prior public use, prior invention, prior patent, prior knowledge or prior sale. One may not combine two or more items of prior art to make out an anticipation. One should, however, take into consideration, not only what is expressly disclosed or embodied in the particular item of prior art, but also what inherently occurred in its practice.
4. There cannot be an accidental or unrecognized anticipation. A prior duplication of the claimed invention that was accidental, or unrecognized, unappreciated, and incidental to some other purpose is not an invalidating anticipation.

Those four requirements must be kept in mind and applied to each kind of anticipation in issue. The following additional requirements apply to some categories of anticipation.

1. Prior Knowledge: An invention is anticipated if it was known by others in the United States before it was invented by the patentee. "Known," in this context, means known to the public. Private knowledge, secret knowledge or knowledge confined to a small, limited group is not necessarily an invalidating anticipation. Things that were known to the public only outside the United States are not invalidating anticipation.

2. Prior Use: An invention is anticipated if it was used by others before it was invented by the patentee, or more than one year before the patentee filed his patent application. "Use," in this context, means a public use.

3. Prior Publication: A patent is invalid if the invention defined by the claims was described in a printed publication before it was invented by the patentee or more than one year prior to the filing date of his application. For a publication to constitute an anticipation of an invention, it must be capable, when taken in conjunction with the knowledge of people of ordinary skill in the art, of placing the invention in the possession of the reader. The disclosure must be enabling and meaningful. In determining whether the disclosure is complete, enabling, and meaningful, one should take into account what would have been within the knowledge of a person of ordinary skill in the art at the time, and one may consider other publications that shed light on the knowledge such a person would have had.

4. Prior Patent: If the invention defined by the claims was patented in the United States or a foreign country, either before it was invented by the inventor or more than one year before the inventor filed his patent application, then the invention was anticipated. The effective date for this type of anticipation is the date on which two things co-existed: (i) the owner of the referenced patent had the right to enforce that patent; and (ii) the reference patent was available to the public. What was "patented" in the reference patent is determined by what is defined by its claims, interpreted in the light of the general description.

5. On Sale: A patent is invalid if the invention claimed in it was on sale in the United States more than one year prior to the application filing date.

6. Prior Invention: If the invention defined by the claims was invented by another person, in the United States, before it was invented by the inventor, and that other person did not abandon, suppress, or conceal the invention, the invention lacks novelty. A prior invention, even if put in physical form and shown to produce the desired result, is not an invalidating anticipation unless some steps were taken to make it public. However, it is not necessary that the inventor had knowledge of that prior invention.

7. Prior U.S. Application: A patent is invalid for lack of novelty if the invention defined by the claims was described in a United States patent issued on a patent application filed by another person before the invention was made by the inventor. The effective date of a prior application for purposes of this issue is the date on which it was filed in the United States. Foreign-filed patent applications do not apply. If the issued United States patent claims the benefit of more than one United States application, its effective date as an anticipation is the filing date of the first United States application that discloses the invention claimed in that referenced patent.

Experimental Use Exception: The law recognizes that it is beneficial to permit the inventor the time and opportunity to develop his invention. As such there is an "experimental use" exception to the "public use" and "on sale" rules. Even though the invention was publicly used or on sale, more than one year prior to the application filing date, that does not invalidate the patent, provided the principal purpose was experimentation rather than commercial benefit. If the primary purpose was experimental, it does not matter that the public used the invention or that the inventor incidentally derived profit from it.

When a public use or sale is shown, the burden is on the inventor to come forward with evidence to support the experimental use exception. Only experimentation by or under the control of the inventor qualifies for this exception. Experimentation by a third party, for its own purposes, does not qualify for this exception. Once the invention leaves the inventor's control, its use is a public one, even if further experimentation takes place.

The experimentation must relate to the claimed features of the invention. And it must be for the purpose of technological improvement, not commercial exploitation. If any

commercial exploitation does occur, it must be merely incidental to the primary purpose of experimentation. A test done primarily for marketing, and only incidentally for technological improvement, is a public use.

REJECTIONS UNDER 35 U.S.C. § 103:

Claims 38, 42, and 46 stand rejected under 35 U.S.C. § 103(a) over Carlson in view of Chase et al., "Production and Operations Management: Manufacturing and Services" (1995) ("Chase").⁸

Claim 38 depends from claim 37, claim 42 depends from claim 41, and claim 46 depends from claim 45. As discussed above, Carlson fails to disclose or suggest all of the limitations of these claims. It is respectfully submitted that Chase fails to cure these deficiencies.

Claims 37, 39, and 41 and their dependent claims further patentably distinguish over the teachings of Chase for the following reasons.

For example, Chase is silent with respect to determining "a second intermediate-product quantity of the intermediate product that the manufacturer can produce in addition to the first intermediate-product quantity" and determining "based on the demand quantity of the end product and the second intermediate-product quantity, a total by-product quantity of the by-product that the manufacturer can produce." In fact, Chase teaches away from these limitations:

Section C of [Exhibit 19.6] shows that the outputs from X (a bottleneck) and Y (a nonbottleneck) are assembled into a product. As a nonbottleneck, Y has more capacity than X *so it can be used only 75 percent of the time*; otherwise spare parts accumulate.

(Chase, page number not visible, second paragraph below Exhibit 19.6, lines 1-3, emphasis added) The system claimed in claim 37 determines a quantity of intermediate product and by-product that can be manufactured once demand has been met for the end-product. This concept is clearly not disclosed or suggested by Chase, which instead

teaches that Y, which produces a subassembly of a finished product, "can be used only 75 percent of the time" or else the part output from Y will accumulate. This statement clearly discourages production of at least intermediate products, and by-products as well, beyond that which is necessary for production of end products.

Claims 41 and 45 recite similar limitations, so the above arguments apply equally to claims 41 and 45.

Also, because Chase teaches away from this concept, Chase is not properly combinable with Carlson as proposed in the Office Action.

Thus, for at least the reasons presented above, Carlson and Chase, whether considered separately or in combination, cannot render obvious claims 37, 41, and 45 or their dependent claims (including claims 38, 42, and 46).

For the reasons set forth herein, the Applicant submits that claims 38, 42, and 46 are not rendered obvious by the proposed combination of Carlson and Chase. The Applicant further submits that claims 38, 42, and 46 are in condition for allowance. Therefore, the Applicant respectfully requests claims 38, 42, and 46 be allowed.

The Legal Standard for Obviousness Rejections Under 35 U.S.C. § 103:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q.

⁸ More specifically, the following portions of Chase: pages 544-549, 586-613, 618-622, and 770-781.

580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

A recent Federal Circuit case makes it clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35.

CONCLUSION:

In view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and early reconsideration and a Notice of Allowance are earnestly solicited.

No fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees that may be required, or credit any overpayments, to Deposit Account No. **500777**. If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed. Any fee required for such Petition for Extension of Time should be charged to Deposit Account No. **500777**.

Please link this application to Customer No. 53184 so that its status may be checked via the PAIR System.

Respectfully submitted,

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Date



James E. Walton, Registration No. 47,245
Daren C. Davis, Registration No. 38,425
Brian E. Harris, Registration No. 48,383
Michael Alford, Registration No. 48,707
Law Offices of James E. Walton, P.L.L.C.
1169 N. Burleson Blvd., Suite 107-328
Burleson, Texas 76028
(817) 447-9955 (voice)
(817) 447-9954 (facsimile)
jim@waltonpllc.com (e-mail)

CUSTOMER NO. 53184
ATTORNEYS AND AGENTS FOR APPLICANT